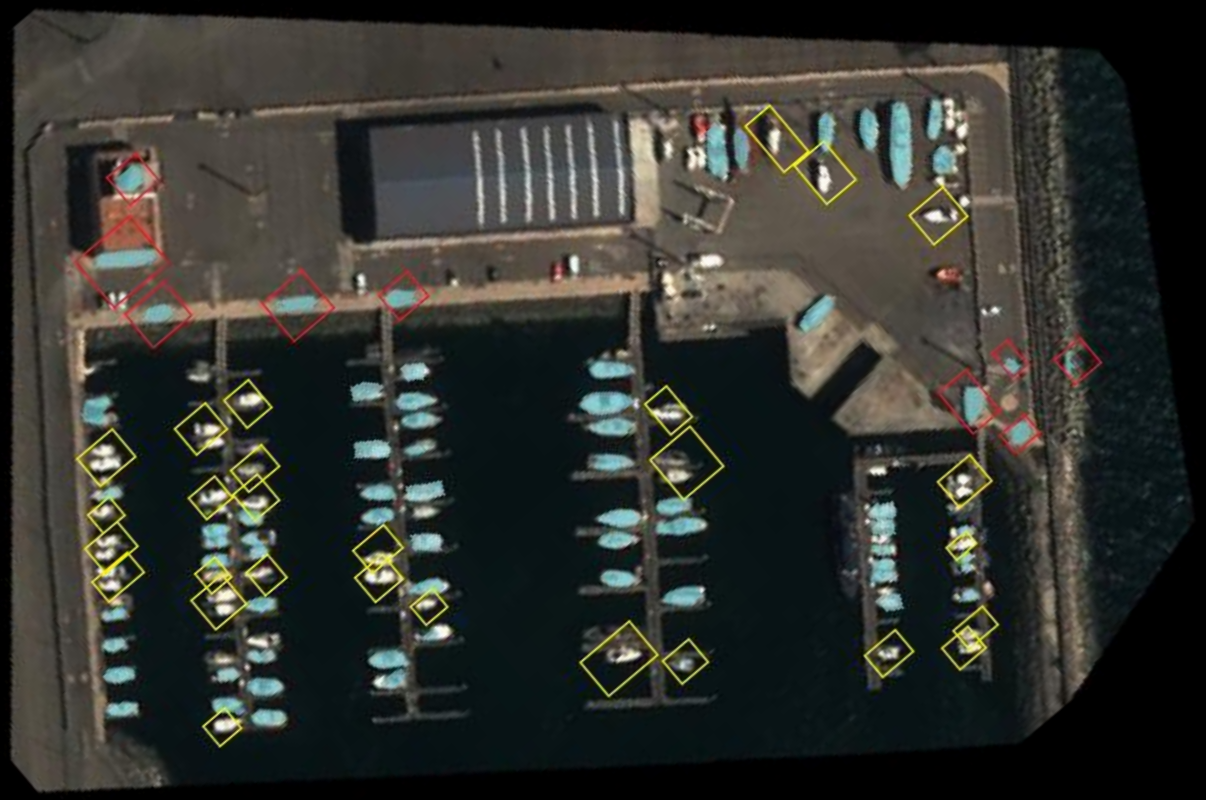
Monitoring social distancing practices, via recreational boat usage

- In most countries, when a lockdown was declared due to COVID-19 the majority of recreational services were shutdown/closed.
- Therefore, we can assume that at a recreational marina (boat launch/dock) with a high number of docked boats, proper social distancing protocols have been followed.
- Whereas at one with fewer boats it could be presumed that: all boats have been reclaimed/put into storage by owners (this is unlikely due to the sudden/unpredictable onset of COVID-19) OR people are still using there recreational crafts (not following social distancing protocols)

Findings

- Incorrectly identified boats are highlighted with red squares (9).
- Missed boats are highlighted with yellow squares (30).
- The remaining cyan colored masks are boats that have been correctly identified (61).

<u>Image</u>
Where: Port of Barcelona
Composite: True Colour, Pansharpened
Date: 2020-04-07



Contains modified Pleiades data processed by Euro Data Cube

Conclusions and Next Steps

- Trained a deep-learning model to detect recreational boats that are docked.
- Works best in marina environments.
- Although the model operates well from initial trials, further improvements could be made by utilizing a larger variety of high quality imagery data to optimize training.
- To extend the functionality of this model, further testing and implementation of additional algorithms (YOLO, SIN, STDN, etc.) could be done to determine which is the most robust and effective for this scenario.
- Other models could be trained for specific types of boats (if the data was present), to better understand marina make-up and help differentiate between those boats that are not recreational crafts.